TITLE: DETECTION OF GENOGROUP I PICOBIRNAVIRUS IN GOAT FECAL SAMPLES FROM MEAT-GOAT FARMS IN PARANA STATE

AUTHORS: FERREIRA, C.N.[1]; SCHERPINSKI, N.L.[1]; FREITAS, J.A.[1]; PORTO, P.P.[2]; ZACARIAS, F.G.S.[2]; OGAWA, L.[2]; TAKIUCHI, E.[1]

INSTITUTION: [1]UNIVERSIDADE FEDERAL DO PARANÁ, PALOTINA, PR (RUA PIONEIRO, 2153, CEP 85950-000, PALOTINA – PR, BRAZIL). [2]UNIVERSIDADE ESTADUAL DO NORTE DO PARANA, BANDEIRANTES, PR (RODOVIA BR-369 KM 54, VILA MARIA, CEP 86360-000, BANDEIRANTES, PR, BRAZIL).

ABSTRACT:

Picobirnaviruses (PBV) are emerging non-enveloped viruses with a bisegmented double stranded RNA genome (dsRNA). They are classified in two different genogroups due to the high genetic variability of the genomic segment that encodes RdRp. PBV have been widely detected in environmental, respiratory and fecal samples, but are yet to be propagated in animal cell cultures and there is still controversy about their true host. Moreover, data about their presence in goat herds is still limited worldwide. To access the occurrence of PBV, sampling was performed in three meat-goat farms located in the municipalities of Palotina (n=8 fecal samples and n=2 nasal swabs), Nova Santa Rosa (n=19 fecal samples and n=8 nasal swabs) and Santo Antônio da Platina (n=12 fecal samples), Paraná State, totaling 39 animals. The diagnosis was carried out by by silver-stained 7.5% polyacrylamide gel electrophoresis (SS-PAGE) and RT-PCR with the PicoB25 (5' TGGTGTGGATGTTTC 3') and the PicoB43 primers (5' AGATGCTTGGTCGAACTT 3') that amplify a 201 bp fragment of RdRp gene of genogroup I PBV. Out of total fecal samples, GI PBV was detected in 2.6% (1/39) and 69.2% (27/39) by SS-PAGE and RT-PCR, respectively. All herds surveyed had PBV positive samples by RT-PCR, with frequencies of 62,5% (5/8 animals), 57.9% (11/19 animals) and 91.7% (11/12 animals). PBV was not detected in any of nasal swab samples. Given the low sensitivity of SS-PAGE technique, the positive result suggests intense viral replication and excretion by that animal, which is consistent to the high frequency in which PBV was found in that herd (91.7%). To the best of our knowledge, this is the first report of PBV in Brazilian goat farms. Although there remains much to be known about the pathogenesis and epidemiology of PBV, these preliminary results confirm the high rate of PBV detection in goat feces in flocks from Parana State. New studies should be conducted to evaluate the pathogenic potential and genetic diversity in the caprine host.

Keywords: feces; goat; Picobirnavirus; RT-PCR; SS-PAGE.

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